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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,527	11/28/2001	Mamoru Nakasuji	4641-61168	3559

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EXAMINER

HUGHES, JAMES P

ART UNIT PAPER NUMBER

2881

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/996,527

Applicant(s)

NAKASUJI, MAMORU

Examiner

James P. Hughes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) 14 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 and 13 is/are allowed.
- 6) ☒ Claim(s) 11, 15 and 16 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. All objections to the drawings, specification, and claims set forth in the office action mailed February 27, 2003 have been overcome by applicant's amendments in the amendment field on August 29, 2003.
2. All 35 USC 101 and 112 rejections to claims 15 and 16 have been overcome by applicant's amendments in the amendment field on August 29, 2003.
3. The 35 USC rejections to claims 3-5 and 9-10 are withdrawn, as applicant's arguments on page 12 of the amendment field on August 29, 2003 are persuasive.

Response to Arguments

4. Applicant's arguments see pages 13-16 of the amendment, filed on August 29, 2003, with respect to application of Yamada et al. (5,304,811) in view of Luzzi (5,225,999) have been fully considered and are persuasive. The 35 USC 103 rejections of claims 1-13 and 15-16 have been withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 11, 15 and 16 are rejected under 35 U.S.C. 103(a) as being obvious over Suzuki (2002/0038852).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(1)(1) and § 706.02(1)(2).

Suzuki (2002/0038852) – which has the same assignee (Nikon Corporation) as the instant application – teaches a magnetic shielding device, method, and inherent process of manufacturing a charged particle beam (CPB) microlithography system comprising; a charged particle beam (CPB) illumination optical system (1) situated alone an optical axis, directing an

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illumination beam onto a selected region on a substrate using a CPB projections exposure optical system (2) situated along the optical axis, causing the beam to form an image on a surface of a substrate held on substrate stage (15) situated downstream of the exposure optical system (2); detecting a magnetic field external to the illumination optical system and exposure system; in response to the detected external magnetic field, producing a corresponding magnetic field (via coils 5 or 6) locally in the vicinity of the optical axis between illumination between the illumination optical system (1) and the projection-optical system (2) and a magnetic-field compensation coil (7) situated between the projection-optical system (2) and the substrate stage (15) so as to cancel at least a portion of the detected external magnetic field. (See e.g., paragraphs 10-25)

However, Suzuki does not explicitly state that the illumination beam impinges a pattern defining reticle or that the projection exposure projection system (2) carries an actual aerial image of the illuminated reticle region on the substrate on the substrate stage (15). Since these basic exposure techniques are notoriously well known in the art, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Suzuki into such a system.

Allowable Subject Matter

6. Claims 1-10 and 13 are allowable. The following is a statement of reasons for the indication of allowable subject matter. Claims 1 and 13 are allowable because the prior art of record fails to teach or fairly suggest a charged particle beam (CPB) microlithography system, or means for, comprising, in combination with the other recited limitations in the claim, a magnetic-

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field-compensation circuit connected to the magnetic-field-compensation coil and configured to deliver an electrical current to the magnetic-field-compensation coil. Claims 2-10 are allowable by virtue of their dependence on claim 1.

7. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record fails to teach or fairly suggest a charged particle beam (CPB) microlithography method, or means for, in which an illuminated beam is directed by a CPB illumination-optical system onto a selected region of a pattern-defining reticle to produce a patterned beam carrying an aerial image of the illuminated reticle region, and the patterned beam is caused by a CPB projection-optical system, situated down stream of the illumination-optical system, to form an actual image of the illuminated reticle region on a corresponding region on a surface of a substrate, a method for detecting and canceling magnetic fields external to the CPB optical system, the method comprising, in combination with the other recited limitations of the claim and its base claim, determining the electronic current supplied to the magnetic-field -compensation coil based on the detected external magnetic field and the ratio.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James P. Hughes whose telephone number is (703) 305-5675.

The examiner can normally be reached on Monday - Friday 9am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (703) 308-4116. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

James P. Hughes
Patent Examiner
Art Unit 2881

JK


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
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